

THE BREMUS RESEMBLING MALLOPHORÆ OF THE
SOUTHEASTERN UNITED STATES (DIPTERA
ASILIDÆ).BY S. W. BROMLEY,
Amherst, Mass.

The robber-flies of the genus *Mallophora* are, for the most part, rather large and densely-pilose, and are of a more compact build than most of the other members of the Asilidæ. Nearly all of them resemble bees of one kind or another, and the species of the particular section of this genus here treated bear a marked resemblance to bumble-bees. In some cases the resemblance is actually specific. For example, *Mallophora orcina* (Wied.) is a counterpart of the worker of the bumble-bee, *Bremus pennsylvanicus*. The resemblance is, of course, most striking in the field, particularly if the flight of the asilid is directed away from the observer. The illusion is destroyed, however, when the flight of the insect is directed toward the observer, as the conspicuous yellow beard and mystax of the fly dispel all doubts as to its identity. When the robber-fly is at rest, moreover, the posture assumed is entirely different from that of any bumble-bee. In fact, it seems to the writer that the mimicry is not nearly as striking as in the case of some of the robber-flies of the genus *Dasyllis*, such as *D. thoracica*, where the imitation of a bumble-bee is so exact that even an experienced collector may be misled when the insect is in flight.

Of the species here considered, *M. orcina* is the most abundant and has the widest geographical distribution. I have taken this species commonly in Northwestern Missouri, and have examined specimens from most of the southern states, including Florida and Texas. It is found in southern Ohio and, according to Mr. C. T. Greene of the National Museum, is very common in the neighborhood of Washington, D. C. The type-locality of Wiedeman's specimen is "Savannah." In Arizona, a very closely related species, *Mallophora fulva* Banks (Canadian Entomologist vol. 43, no. 4, 1911, p. 130), has been taken. This is so close to *orcina* that it may possibly prove to be a western variety. However, until a full series showing the merging of the

characters is available, it is best to consider it a distinct species. *Mallophora faütrix* O. S. another western species, smaller than, but bearing a superficial resemblance to, *orcina*, may be easily distinguished by the reddish ground color of the femora (instead of black) and the absence of black pile on the abdomen.

Mallophora bomboides (Wied.) is abundant in some parts of Florida and has also been taken in Georgia. The type locality is "Georgia." The only records of *M. nigra* Willst. that I could obtain are from Florida. *M. rex* sp. n. I have from N. Carolina, Mississippi, and Florida; while *M. chrysomela* sp. n. is represented by specimens from Georgia and Mississippi.

All five species are quite closely related. The first species to be described was named *bomboides* by Wiedeman evidently because of its resemblance to a bumble-bee. The resemblance is not as striking, however, when the insect is observed in the field, as in the case of *orcina*.

In 1893, Coquillet devised a key to the genus *Mallophora* dealing with all species then known to occur in America north of Mexico (Canadian Entomologist, vol. 25, no. 5, p. 118). The key presented below does not include all of the species of this genus, but simply a natural group of five species occurring in the Southeastern United States, and is included for the purpose of bringing out clearly the differences existing between the two new species described and those most nearly resembling them.

1. Pile of abdomen wholly black. *nigra* Willst.
Pile of abdomen partly light-colored. 2
2. Light-colored pile on basal 4 or 5 tergites. *orcina* Wied.
Light-colored pile on first 3 tergites: always black on 4th. . . 3
3. Wings light yellowish-brown. *bomboides* Wied.
Wings dark purplish-brown. 4
4. 3rd joint of antenna $\frac{1}{3}$ length of arista: male genitalia with yellow hair. *chrysomela* sp. n.
3rd joint of antenna subequal to arista in length: male genitalia with black hair. *rex* sp. n.

A table is also included, showing points of contrast in the case of the four species whose characters make them difficult to distinguish. Length measurements of the body do not mean

a great deal in this genus, as the abdomen may be contracted in some individuals and distended in others. A better basis of comparison is the wing measurement.

Mallophora rex, sp. nov.

♂ ♀—Length of body, 26-33 mm. (A series of 86 *M. bomboides* from Florida gave lengths from 23-29 mm.) Similar to *bomboides* in habitus. Mystax composed of dense yellow bristles below, black above. Beard, light yellow. Palpi, black with yellow hairs and a few black ones. Antennæ dark brown.

Pile along anterior border of prescutum and lateral anterior angles of thorax, yellow. A strip of yellow pile extending from base of wings to metacoxæ. Scutellum covered with a dense mass of long yellow pile. Other hairs of thorax black.

Wings dark purplish brown. Legs dark reddish-brown, densely covered with short, stout black hairs. The hind femur with a very few inconspicuous yellow hairs intermingled. The under side of the hind tibia of the ♂ bears a small tuft of white pile.

In five specimens from N. Carolina the venter of the abdomen is covered solely with black hairs; in the five other specimens from which the description was drawn (three from Mississippi, one from N. Carolina, and one from Florida), there is a median line of light yellow pile, broadening toward the apex of the abdomen where it clothes the sixth and seventh segments. The first three tergites bear dense yellow pile. The remainder of the pile on the abdomen is black. The hairs on the male claspers are black.

Habitat. Three specimens from the collection of the Miss. Agricultural College, received from Professor Harned. Newton Co., Mississippi (Aug. 1920) (E. Blackburn); Iuka, Miss. (J. N. Miller); Leaksville, Miss. (Aug. 20) (O. Z. Smith). Four specimens from Southern Pines, N. C., three of which were taken Aug. 1907, and one 1, 7, '89 (A. H. Manee coll.) received from Mr. Nathan Banks; and two from the collection of the American Ent. Soc., courtesy of Mr. E. T. Cresson, Jr. The Data on the latter are: one from "Florida," and one from Southern Pines, N. Carolina (VIII, 26, '09) collected by A. H. Manee.

***Mallophora chrysomela*, sp. nov.**

♂—Length of body 23-27 mm. Thick, heavy hairs of mystax, beard, palpi, occiput, genæ, and post-genæ bright yellow; a very few black hairs intermingled with the yellow on palpi.

On the meso-thorax a patch of yellow pile extends cephalad from the base of the wings to the prothorax which is also covered with yellow pile. There are a few yellow hairs along the anterior margin of the prescutum. Scutellum covered with thickly set, long yellow pile. A narrow area of long yellow hair extends from a point below and slightly posterior to the base of the wing, to the metacoxa. Wings dark purplish brown. Legs reddish-brown, densely clothed with black hairs. Some yellow pile on hind femora, and a thick patch of silver hairs on the inner side of the distal portion of the hind tibia. Pro- and meta-coxæ with yellow hairs intermingled with a few black ones.

Abdomen with first, second and third tergites with thick yellow pile. Venter with a median area of yellow pile, narrow anteriorly but widening posteriorly to cover entirely the sixth and seventh segments, where it becomes darker in color, approaching orange. Other hairs on abdomen black. Hair on male claspers yellow.

Habitat. Two specimens from Gulfport, Miss., Sept. 11, 1916 (C. C. Greer), one from Ship Island, Miss. (9-6.20) (B. L. Collins). All three from the collection of the Miss. Agricultural College, examined through the kindness of Professor Harned. Another (6-30-06) from Atlanta, Georgia, from the American Ent. Soc. Coll. Philadelphia, Pa., examined through the kindness of Mr. E. T. Cresson Jr.

Of the species discussed above, the following are pictured in Howard's Insect Book.

Mallophora orcina (Wied.) Plate XVII, fig. 21 and 23.
M. bomboides (Wied.) Plate XIX, fig. 22. *M. fautrix* O. S. Plate XVIII, fig. 3.

TABLE OF MALLOPHORA OF THE BOMBOIDES GROUP.

	Length of wing in mm.		Color						
	Range	Average	Third joint of antenna	Light hairs on body	wings	hairs on legs	pile on under-side of abdomen	hairs on ♂ genitalia	pile on dorsum of abdomen
<i>orcina</i> Wied.	16-22	18.1	$\frac{1}{3}$ - $\frac{1}{2}$ length of arista	bright yellow	dark purplish brown	black. ♂'s with white tuft on under side of hind tibia and distal joints of hind tarsus. Lacking in some ♂'s.	black	black	yellow-basal 4 or 5 tergites. black-remainder
<i>bomboides</i> Wied.	24-28	25.4	nearly as long as arista	white	light yellowish brown	largely white	largely white	white	white-basal 3 tergites. black-4th tergite
<i>rex</i> , sp. n.	26-29	27.3	sub-equal in length to arista	yellow (pale to bright)	dark purplish brown	black. ♂'s with silver tuft on under side of hind tibia	black in some; in others, black with median line of yellow hairs.	black	yellow-basal 3 tergites. black-4th tergite. Remainder black in some cases (♂'s) yellow on apical 2 segments.
<i>hrysomela</i> sp. n.	23-24	23.2	$\frac{1}{3}$ length of arista	yellow with slight olive tint	dark purplish brown	Mostly black. Some yellow on hind femur. Silver tuft on under side of hind tibia 'in ♂.	largely yellow	yellow	Yellow-basal 3 tergites black-4th tergite yellow on apical 2 segments.